Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
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NextNav, Inc. Petition for Rulemaking) WT Docket No. 24-240
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COMMENTS OF THE UTILITIES TECHNOLOGY COUNCIL

The Utilities Technology Council ("UTC") hereby submits its comments in response to the Public Notice by the Wireless Telecommunications Bureau ("WTB") and the Office of Engineering and Technology ("OET") and in opposition to the Petition for Rulemaking by NextNav, Inc. in the above-captioned proceeding.[1] UTC opposes the Petition because it proposes to eliminate any semblance of protection against unacceptable interference to unlicensed operations in the 902-928 MHz ("Lower 900 MHz band"), and it would authorize NextNav to operate a 15 megahertz bandwidth configuration that would dramatically increase the potential for interference to unlicensed operations in the Lower 900 MHz band, including millions of utility meters and many supervisory control and data acquisition ("SCADA") systems.

NextNav claims it is completing technical analyses and "will work with unlicensed users to understand their spectrum requirements," but it has provided no technical evidence thus far to support its claim that "[c]oexistence between the NextGen system and unlicensed Part 15 operations should be achievable,"[2] nor has it attempted to contact unlicensed users, as far as UTC is aware. NextNav claims that its requested relief is necessary to backup GPS and improve wireless E911 location accuracy, but these claims are unsupported and highly speculative. Meanwhile, NextNav's proposed reconfiguration of the Lower 900 MHz band would have real and widespread catastrophic consequences for the public interest in a variety of incumbent operations, including those by utilities, and it would represent a fundamental departure from Commission past precedent. Moreover, the proposed spectrum swap would result in a huge windfall for NextNav, which would also be contrary to the public interest. For all these reasons as provided in more detail below, UTC respectfully requests that the Commission deny NextNav's Petition.

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[1] Petition for Rulemaking in WT Docket No. 24-240 filed Apr. 16, 2024 (hereinafter "Petition"). *See also* Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on NextNav Petition for Rulemaking" *Public Notice*, DA 24-776 (Aug. 6, 2024) (hereinafter "Public Notice").

[2] Petition at 31.

I. Identification and Protection of Incumbents

In the Public Notice, the WTB and OET observed that NextNav recognizes unlicensed Part 15 devices operate in the Lower 900 MHz band, yet the Petition is "unclear regarding the extent to which the proposed reconfiguration would impact potentially millions of such devices."[3] The WTB and OET requested comment on the extent of Part 15 devices in the band and what potential impact band reconfiguration and flexible use rules, including elimination of the testing requirements of current rule section 90.353(d), might have on Part 15 devices.[4] Specifically, WTB and OET asked for comment on the services that are being provided by Part 15 devices, whether they can be accommodated in other spectrum bands, and the costs and timelines for relocation. Finally, WTB and OET asked for comment on the status of any outreach with Part 15 device users by NextNav.[5]

UTC believes that the potential for interference from NextNav's proposed operations would be even greater than its current multilateration location and monitoring service ("M-LMS") operations, given its proposal to reconfigure the Lower 900 MHz band to allow NextNav to operate with a 5-megahertz uplink in the 902-907 MHz band and 10-megahertz downlink in the 918-928 MHz band at higher power limits to support both "precision, navigation and timing" ("PNT") and mobile broadband across the entire country on a nationwide geographic license basis. NextNav is well-aware of the fact that utilities operate millions of meters and many SCADA systems in the 900 MHz band and that its operations will cause harmful interference to these utility operations. They already have caused such interference to utility systems with their existing M-LMS systems,[6] and their proposed operations will only increase the potential for interference to these utility operations because their higher power broadband signals will produce greater in-band and out-of-band emissions.

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[3] Public Notice at 4.

[4] *Id.*

[5] *Id.*

[6] *See* Letter from Melissa Lavinson, Vice President of Federal Affairs, Pacific Gas & Electric Corporation to

In the Petition, NextNav largely ignores the potential impact the proposed band reconfiguration and flexible use rules would have on Part 15 unlicensed operations. It clearly recognizes that the requested relief in the Petition would cause widespread interference to a multitude of unlicensed operations, including millions of meters and many SCADA systems that operate in the Lower 900 MHz band. It acknowledges the potential interference where it states, "Part 15 devices must coexist with one another in addition to other operations," and "Part 15 devices need to be robust and adapt to ever-present interference."[7] It offers no assurances that its proposed operations will not cause interference to these unlicensed operations, and it goes on to observe that "[u]nlicensed devices have the lowest priority and cannot claim interference rights, except for unacceptable interference from M-LMS licensees in some cases."[8] Finally, it proposes to eliminate section 90.353(d), which provides in relevant part that "EA multilateration LMS licenses will be conditioned upon the licensee's ability to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to 47 CFR Part 15 devices operations in the band."[9]

Despite the fact that its M-LMS operations have caused interference to utility SCADA systems in the past, and it clearly recognizes the likelihood that its proposed operations would cause interference to millions of utility meters as well as other SCADA systems, NextNav has not reached out to any utilities in regards to its Petition as far as UTC is aware.   Moreover, the supplemental submission to its Petition

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Marlene H. Dortch, Secretary, Federal Communications Commission in WT Docket No. 11-49 (filed May 17, 2013), *available at* https://www.fcc.gov/ecfs/document/6017444691/1 (notifying the FCC of a specific instance where the position location system utilized by the applicant in the above-referenced Docket, Progeny/NextNav LLC ("Progeny" or "NextNav"), caused interference with Pacific Gas and Electric Company's ("PG&E)") long-range supervisory control and data acquisition ("SCADA") systems).

[7] Petition at 31.

[8] *Id*. at 18.

[9] 47 C.F.R. §90.353(d). *See also* Letter from Robert Lentz, General Counsel for NextNav, Inc. to Marlene H. Dortch, Secretary of the Federal Communications Commission in WT Docket No. 24-24 at A-4 (filed June 7, 2024)(proposing to update the Part 90 rules, including and in particular proposing to "[r]emove special treatment for unlicensed operations vis-à-vis licensed operations in the band," by striking 90.353(d) from the rules)(hereinafter supplemental submission").

proposing to eliminate section 90.353(d) from the rules only underscores UTC's concern that NextNav recognizes that its proposed operations will cause interference to utility operations, and it has no intention of doing anything to protect these operations, despite its assurances that it is "completing technical analyses intended to address representative Lower 900 MHz Part 15 uses" and it "will work with unlicensed users to understand their spectrum requirements."[10]

As the Commission is aware, utilities rely on the Lower 900 MHz band to support advanced metering infrastructure ("AMI") and SCADA systems.[11] Utilities have invested billions of dollars in these systems, and the federal government has promoted the deployment of AMI as the foundation towards the broader development of clean energy and infrastructure security policies.[12] Interference from NextNav's proposed operations would strand those investments and seriously impair overarching national policy objectives. Utilities lack reasonable alternatives to using the 902-928 MHz band for these operations, and the cost and time required to retool millions of these utility devices in the field and relocate their operations to another spectrum band would be enormous and would far outweigh any purported benefits claimed in NextNav's Petition.[13] Moreover, harmful interference from NextNav's 5G operations would seriously degrade, obstruct, and repeatedly interrupt these utility operations, preventing them from operating within their required parameters and rendering them unreliable. These consequences of harmful interference would, in turn, threaten the reliable, safe and efficient delivery of essential electric, gas and water utility services. There appears to be no workable solution, nor does it appear that NextNav is interested in pursuing solutions to prevent interference to these and other unlicensed operations in the Lower 900 MHz band.

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[10] *Id.*

[11] *See generally*, Comments of the Utilities Telecom Council ("UTC") in WT Docket No. 11-49 (opposing authorization of commercial M-LMS operations). *See also* Petition for Reconsideration by the Utility Trade Associations in WT Docket No. 11-49 (filed July 8, 2013) and Reply of The Utility Trade Associations in WT Docket No. 11-49 (filed Aug. 2, 2013) *And see* Petition for Reconsideration of the Part 15 Coalition in WT Docket No. 11-49 (filed July 8, 2013).

[12] *See* e.g., "Recovery Act: Smart Grid Investment Grant (SGIG) Program," Department of Energy, *available at* https://www.energy.gov/oe/recovery-act-smart-grid-investment-grant-sgig-program#:~:text=Under%20the%20largest%20program%2C%20the%20Smart%20Grid%20Investment,of%20data%20on%20smart%20grid%20operations%20and%20benefits (stating that "[u]nder the largest program, the Smart Grid Investment Grant (SGIG), DOE and the electricity industry have jointly invested $8 billion in 99 cost-shared projects involving more than 200 participating electric utilities and other organizations to modernize the electric grid, strengthen cybersecurity, improve interoperability, and collect an unprecedented level of data on smart grid operations and benefits."). *See also* Jonathan Spencer Jones, "Smart meter penetration surpasses 80% in North America," Power Grid International (June 11, 2024), *available at* https://www.power-grid.com/smart-grid/metering/smart-meter-penetration-surpasses-80-in-north-america/#gref (reporting that "[t]he number of smart meters in North America reached almost 146 million at the end of 2023 and with ongoing growth is expected to number 182.9 million in 2029" and that there are an estimated 130.6 million smart electricity meters in the US and 15.4 million in Canada). *See also Id.* (reporting "wireless RF as the preferred technology, accounting for the vast majority of installations, both in the electricity and gas sectors," and that "[t]he leading players provide proprietary RF mesh or star topology platforms for the unlicensed 915MHz ISM band, in addition to licensed sub-GHz spectrums.") *And see* "How many smart meters are installed in the United States, and who has them?" Energy Information Administration, *available at* https://www.eia.gov/tools/faqs/faq.php?id=108&t=3 (stating that "[i]n 2022, U.S. electric utilities had about 119 million advanced (smart) metering infrastructure (AMI) installations, equal to about 72% of total electric meters installations.)

II. Public Interest Considerations

Although NextNav emphasizes the benefits for GPS and E-911 wireless location accuracy, these benefits are speculative and would primarily benefit NextNav rather than the larger public interest.[14] To be sure, utilities appreciate the importance of GPS, because it supports the synchronization of the distribution of electricity, and utilities fully support efforts to improve the reliability and accuracy of GPS. However, NextNav has not demonstrated nor could it demonstrate that its proposal is the only way to improve GPS, let alone whether it is so important that the Commission should upset the existing framework that ensures the co-existence of M-LMS operations and unlicensed operations in the band.

Moreover, NextNav conflates the importance of GPS with its proposal, but it is a false narrative. GPS doesn't need NextNav. GPS can already support location positioning indoors using Wi-Fi triangulation,[15] and even though NextNav may improve and supplement GPS in this regard, it isn't necessary to support such capability.[16] Finally, while PNT arguably promotes better location accuracy in certain locations outdoors, such as urban canyons, NextNav concedes that it is not cost-effective as a standalone widescale network.[17] According to NextNav, the only way to make it cost-effective is to reconfigure the Lower 900 MHz band "so that the PNT network will be integrated into commercial broadband partner networks," and it can also support 5G. In the final analysis, it is clear that this Petition is less about improving GPS and E911 location accuracy than it is about leveraging 5G for the principal benefit of NextNav.

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[13] *See e.g.* Comments of Southern California Edison in WT Docket No. 24-40 at 7 (filed Sept. 3, 2024)(reporting that "[a]ny major changes to or relocation of SCE's systems deployed in the 900 MHz band will result in significant and large-scale impacts, costing several hundred million dollars, that will directly affect millions of households, business customers and rate payers. Any such relocation will require 10-15 years due to the size, volume and complexity of SCE's infrastructure and systems.")

[14] *See* Petition at 22-28.

[15] "Wi-Fi Positioning," Mapscaping (Sept. 18, 2023) *available at* https://mapscaping.com/wi-fi-positioning/#:~:text=Yes%2C%20Wi-Fi%20positioning%20is%20particularly%20effective%20indoors.%20GPS,like%20shopping%20malls%2C%20airports%2C%20and%20large%20office%20buildings.

[16] "The Wireless Industry's Commitment to 9-1-1 Location Accuracy," CTIA, *available at* https://www.ctia.org/news/blog-the-wireless-industrys-commitment-to-9-1-1-location-accuracy (stating that device-based hybrid (DBH) technologies have been a "game changer for locating in-building callers, in particular," and

NextNav also misleadingly claims that Commission precedent supports granting it a nationwide license without the need for an auction, and that the same principles apply here as when the Commission permitted broadband licenses in the 897.5-900.5 and 936.5-939.5 MHz bands or in other instances where it changed its rules to provide flexibility in other bands.[18] To the contrary, NextNav's proposal is distinctly different. NextNav's proposal would disrupt incumbent operations for its own benefit, whereas the Commission's decision to permit broadband licenses in the 897.5-900.5 and 936.5-939.5 MHz bands protected incumbents by requiring voluntary negotiation and ensuring comparable facilities for relocation. Similarly, where the Commission provided flexibility in other bands, it did not come at the expense of incumbent operations, and in most cases, the spectrum bands were otherwise lying fallow. There is no such consideration for incumbents in what NextNav is proposing, and the Lower 900 MHz band is heavily used by incumbent operations. At its core, NextNav's proposal is a wholesale takeover of the Lower 900 MHz band, and NextNav only pays lip service to protecting incumbent operations, if at all.

While the purported public interest benefits of NextNav's proposal are speculative and marginal, the impact of interference on unlicensed operations in the Lower 900 MHz band is real and significant, given the sheer number of unlicensed devices that would be placed at risk and the magnitude of the

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explaining that "[d]evice-based hybrid solutions use a combination of technologies and sensors—including satellite GPS and crowd-sourced Wi-Fi measurements—along with wireless providers' other 9-1-1 network and device information, to produce a higher-accuracy location," adding that "[o]perators serving 99% of consumers are leveraging device-based hybrid technologies to locate callers inside buildings with increasing accuracy.")

[17] Petition at ii-iii (explaining why its PNT solution is "not economically feasible to deploy a widescale, standalone terrestrial PNT network.")

[18] Petition at 32-37.

impact of interference to unlicensed operations on the public interest generally. Just in terms of the impact on utilities and the essential services they provide alone, the cost-benefit analysis weighs against the Petition. Add to that all the other unlicensed operations, as well as the federal incumbents and other licensed operations that would be impacted, and the costs clearly outweigh the benefits. The public interest in these unlicensed operations, particularly utility AMI and SCADA systems, is widespread and significant. Accordingly, the Commission should deny the Petition based on the impact it would have on the public interest in the unlicensed operations in the Lower 900 MHz band.

It also is important to note there are less disruptive alternatives to consider instead of the relief requested by NextNav. Clearly, nationwide and non-nationwide wireline and CMRS providers are meeting their milestones to deploy dispatchable location or z-axis technology to support indoor 911 location accuracy. Therefore, it is not necessary to restructure the Lower 900 MHz band as NextNav requests to promote indoor 911 location accuracy or supplement GPS. In fact, the Commission terminated an earlier proceeding because it concluded that "wholesale changes to the existing LMS framework… are not warranted," because "the existing LMS framework can provide M-LMS licensees with sufficient opportunities to provide service offerings," including Progeny's commercial M-LMS position location services network.[19] In so doing, the Commission also expressed its intent to preserve the existing LMS framework "to promote the co-existence of M-LMS operations and unlicensed operations in the band."[20] Therefore, the Commission need not and should not upset the co-existence framework it established between M-LMS and unlicensed operations in the Lower 900 MHz band.

III. Spectrum Swap, Increased Flexibility, and Potential Windfall.

In the Public Notice, the WTB and OET recited a number of various issues with NextNav's proposed spectrum "swap", whereby NextNav would "return all active licenses and associated applications and petitions in exchange for a nationwide license consistent with the new 15-megahertz band plan configuration."[21] At the outset, NextNav only holds approximately 64% of all B and C Block licenses, and it is still trying to acquire all active M-LMS A Block licenses to be included in the offer as part of the swap. Notably, those A Block licenses were previously terminated by the Commission and, unlike the B and C Block licenses, are not authorized by the Commission for commercial purposes.[22] Next, there is the issue with NextNav's stated plans to partner with wireless providers to use the excess capacity for broadband, but the B and C Block licenses are restricted until April 3, 2028, from being assigned, transferred, partitioned, disaggregated, and/or leased to any third party unless the potential assignee, transferee, partitionee, disaggregatee, and/or lessee requests a waiver consistent with the relief granted to Progeny, and WTB grants such relief.[23] Moreover, there are larger issues with NextNav's request to modify its M-LMS service and technical rules to "align with the Commission's flexible-use rules (e.g. Part 27) for mobile and/or fixed broadband operations, including full macro power limits and standard out-of-band-emissions limits," and eliminate the restrictions on real-time interconnection obligations, services that may be provided, and the amount of M-LMS spectrum that a licensee can hold.[24] Similarly, there are a variety of issues with NextNav's request to exchange its existing restrictive part 90 licenses for a single, nationwide license to be operated under flexible use rules including, under proposed rule section 90.1403, being able to provide "any services" for which the band is to be allocated, *i.e.*, fixed and mobile services.[25] Last but not least, there is the issue of the potential windfall that NextNav would receive as a result of its proposed spectrum swap for a new nationwide license, including the acquisition of accompanying rights as a licensee and lessor, and the application of flexible use and less restrictive technical rules to this band.[26] The WTB and OET invited comments on all of these issues.

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[19] *Amendment of the Commission's Part 90 Rules in the 904-909.75 and 919.75-928 MHz Bands*, Order, WT Docket No. 06-49 (rel. June 10, 2014).

[20] *Id.*

The Commission should reject this proposed spectrum swap, because it would be a huge windfall for NextNav if it was able to swap its B and C Block licenses plus the A Block licenses it is seeking to acquire in exchange for a 15 megahertz nationwide flexible use license. Even in the abstract, NextNav's various requests for relief in the Petition are a lot to ask. Not only would the reconfiguration of the band and the relaxation or elimination of certain rules that NextNav proposes result in massive interference to unlicensed operations generally and utility mission critical operations specifically, but it would also inequitably reward NextNav in the process without any assurances of any public interest benefits. Simply put, NextNav proposed swap would be the single biggest giveaway in the history of the Commission.

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[21] Public Notice at 5, *citing* Petition at 30.

[22] *Id*., citing Petition at 29-30.

[23] *Id*., citing *Request for Waiver and Extension of Time, Further Request for Waiver and Extension of Time, Further Waiver Request, and Request for Waiver and Extension of Time,* WT Docket No. 12-202, Order, 38 FCC Rcd 2342 at 2357, para. 34 (WTB MD 2023) (Progeny 2023 Order).

[24] *Id*., *citing* Petition at 29.

[25] *See* NextNav supplemental submission at A-9.

[26] Public Notice at 6.

NextNav would walk away with 15 megahertz of contiguous spectrum and would operate under flexible use rules being able to provide "any services" for which the band is to be allocated, *i.e.*, fixed and mobile services. Even if its current M-LMS license conditions to assist wireless carriers in the deployment of z-axis technology to meet E911 indoor location accuracy were replaced with similar license conditions to ensure that a terrestrial PNT system complementing GPS is permanently implemented and maintained on a nationwide basis, NextNav would only need to use a "small portion" of the 10 megahertz of downlink bandwidth for its PNT services, "leaving the remainder open for voice and data services through integration with mobile network operators' existing 5G networks."[27] Moreover, NextNav only offers 14 megahertz of disparate spectrum licenses in exchange for 15 megahertz of contiguous spectrum, and many of the licenses "offered" by NextNav (*i.e.*, the A Block licenses) have been terminated by the Commission and were not previously authorized for commercial purposes. NextNav only holds 64% of those licenses in those blocks, so it can't even offer to swap all the licenses in those blocks, nor is it currently the licensee of the A-Block licenses which were previously terminated by the Commission, so it can't really offer to swap them either. All considered, the WTB and OET are right to question "NextNav's proposal to receive more spectrum in a larger geographic area than currently held."[28]

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[27] Petition at 27.
[28] Public Notice at 6.

Even NextNav's existing licenses (*i.e.*, the B and C Blocks) are subject to conditions, and they are restricted from being leased or otherwise transferred or assigned. All these conditions and restrictions would presumably go away under this proposed swap, freeing NextNav to partner with third parties to provide broadband wireless services. The modification and elimination of certain technical rules would also enable NextNav to increase power and cause more harmful interference to incumbent unlicensed operations, contrary to the co-existence framework that the Commission created between M-LMS and unlicensed operations. Finally, nothing would stop NextNav from flipping the new spectrum or leasing it to others and profiting without any further capital investment of its own, and it doesn't propose to accept any restrictions as part of the swap to prevent it from leasing or assigning the spectrum to others. No matter how you look at it, this swap would be a huge windfall for NextNav. Therefore, the Petition should be denied or dismissed.

IV. Conclusion

UTC's opposition to NextNav's Petition is rooted in the potential for interference it would cause to utility AMI and SCADA systems, but UTC also opposes the Petition because it is contrary to the public interest in protecting the essential services that utilities and others provide using unlicensed operations in the Lower 900 MHz band. Moreover, the spectrum swap is demonstrably inequitable and is purely intended to solely benefit NextNav. For all these reasons, the Petition should be denied or dismissed.

Respectfully submitted,

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